

# **IOWA HIGHWAY RESEARCH BOARD**

*Minutes of June 29, 2001*

## **Regular Board Members Present**

J. Adam	K. Mahoney
J. George	T. Myers
D. Julius	M. Nahra
B. Keierleber	J. Odgaard
R. Krauel	J. Selmer
S. Larson	W. Weiss

## **Alternate Board Members Present**

S. Andrie for L. Greimann	C. Van Buskirk for D. Osipowicz
L. Brehm for W. Weiss	J. Weber for J. Witt
R. Gould for S. Larson	W. Nixon
G. Miller for J. Selmer	

## **Board Members With No Representation**

None

## **Secretary**

M. Dunn

## **Visitors**

LaDon Jones	<i>Digital Control, Inc.</i>
RH "Bob" Given	<i>Iowa Concrete Paving Association</i>
Saleem Baig	<i>Iowa Department of Transportation</i>
Sara Buseman	<i>Iowa Department of Transportation</i>
Ed Engle	<i>Iowa Department of Transportation</i>
Elijah Gansen	<i>Iowa Department of Transportation</i>
Mike Heitzman	<i>Iowa Department of Transportation</i>
Ian MacGillivray	<i>Iowa Department of Transportation</i>
Mohammad Mujeeb	<i>Iowa Department of Transportation</i>
Bob Steffes	<i>Iowa Department of Transportation</i>
James K. Cable	<i>Iowa State University</i>
Bruce Kjartanson	<i>Iowa State University</i>
F. Wayne Klaiber	<i>Iowa State University</i>
Bob Lohnes	<i>Iowa State University</i>
Ann Sardo	<i>Iowa State University</i>
Sara Somsy	<i>Iowa State University</i>
David J. White	<i>Iowa State University</i>
Terry Wipf	<i>Iowa State University</i>
Dale Harrington	<i>Iowa State University/CTRE, Ctr for PCC Pavement</i>
Kirk Henderson	<i>University of Northern Iowa</i>
Maria Urice	<i>University of Northern Iowa</i>

**The meeting was held in the Large Materials Conference Room at the Iowa Department of Transportation, Ames, Iowa. The meeting was called to order at 9:00 A.M. by John Adam.**

### **Agenda Review/Modification**

- Mark Dunn will add a board item after the minutes regarding the “conflict of interest” statement.
- The order of the agenda was discussed. Specifically, if the unsolicited proposals should fall after the solicited proposals. One comment in favor of this was when the budgets run low at the end of the fiscal year, the board activity (solicited) proposals should have funding priority over the unsolicited proposals. It was decided that the solicited proposals would have precedence and the agenda will reflect that. On the agenda for the current meeting, item #6, “Evaluation of Unbonded Ultrathin Whitetopping of Brick Streets”, will be moved to follow item #8, “Review of Proposals from 2<sup>nd</sup> Solicitation.”

### **Approval of the Minutes**

- Tom Myers moved to accept the minutes from the April 27, 2001 meeting with the correct spelling of “Nahra” noted. Doug Julius seconded. Carried, with 15 yes, 0 no, and 0 abstaining.

### **Review of “conflict of interest” statement**

- Mark Dunn presented a statement for review by the board concerning “conflict of interest”. It was expanded to say, “an employee’s immediate family, employer, or organization”. This will be added to the IHRB Business Plan.

### **Discussion of location for the September 28 and October 26, 2001 meetings**

- Due to the situation of video conferences on September 28 and October 26 at the DOT, overriding the IHRB schedule to have the Large Materials Conference Room, it was decided to keep the June 29 meeting at the DOT (in the Large Material Conference Room) and have the September meeting be the alternate site meeting this year. Jacob Odgaard reported that The University of Iowa would be happy to host the September meeting in Iowa City. The location is still up in the air due to the National Advanced Driving Simulator just getting started. Details will follow.
- Mark Dunn mentioned that Lowell Greimann had offered to host the October meeting at Iowa State University. Details will follow.

### **Problem Statement, “Investigation of Modified Beam-in-Slab Bridge System”**

- Dr. F. Wayne Klaiber, Iowa State University, presented the background, objectives, research plan, value, budget, and time frame of the proposal research.

- There was clarification on the division of contributions: \$185,000 (IHRB) + A (Tama County) + B (ISU).
- A question was raised about the counties' ability to stay within the limit of \$50,000 on building structures like these. The idea of this is to get another alternative for longer bridges. If new beams are used on a 70 foot bridge, it would be close on costs to stay within the \$50,000. For shorter bridges (i.e. 30 feet) or using used beams, there would be no problem staying within that cost parameter.
- Tom Myers moved that Dr. Klaiber bring a proposal back to the board. Brian Keierleber seconded. Carried with 14 yes, 0 no, 1 abstaining.

### **Proposal, "Soil Stabilization of Non-Uniform Subgrade Soils"**

- Dr. David White, Iowa State University, presented the main points from the problem statement, the research objectives (9 main questions), the information on the field investigation and lab study (including importance/types of fly ash), the proposed partnership arrangement (among the IHRB, industry, and The Innovative Pavement Research Foundation (IPRF)), the approach if IPRF doesn't approve the research, the composition of the proposed advisory committee, the budget and time frame, the final report, and the proposal for a guide to implement the findings of the project.
- The board requested that an experienced contractor(s), who does well with soil stabilization, be put on the advisory committee.
- Mark Nahra moved for approval for the IHRB to fund \$70,000 (contingent upon matching IPRF funding) with a funding split of 60% Primary, 35% Secondary, and 5% Street. Brian Keierleber seconded. Carried with 15 yes, 0 no, and 0 abstaining.

### **Final Report, TR-447, "A Computer Program for the Hydraulic Design of Culverts"**

- LaDon Jones, Digital Control, Inc., reviewed the objectives of the project and briefly presented the computer program, using examples. The users manual, installation files and background information are included with the program.
- Distribution plans include mailing the CD to the counties and also having it available on the DOT web site for downloading.
- Randall Krauel moved to approve the final project. Christy Van Buskirk seconded. Carried with 15 yes, 0 no, and 0 abstaining.

### **Review of Proposals from 2<sup>nd</sup> Solicitation**

#### ***Review of Manual for Roadside Control of Trees and Brush***

- This proposal was discussed at the last meeting and tabled due to a couple of items that needed clarification.

- One item of concern was the makeup of an advisory committee and their role in the evaluation process. A memo was included in the board packet giving more detail on this. It stated that there would be at least two county engineers on the committee and discussed the committees level and frequency of input.
- Another concern discussed, which wasn't addressed in the memo, was in reference to naming a specific consultant. It was established that without approval and having funding secured, the task of having someone commit to doing the job is a difficult one. It was decided that after approval of the project, the DOT staff, with input from the advisory committee as necessary, would be responsible for reviewing and approving the consultant during the contract negotiation stage.
- Jim George moved to accept the proposal (Kirk Henderson, University of Northern Iowa), based on approval of the consultant by the advisory committee. Mark Nahra seconded. Carried with 15 yes, 0 no, and 0 abstaining.

***Review of Field Performance Study of Past Iowa Pavement Research: A Look Back***

- *The following general comments about the proposals were made:*
  - Both proposals were excellent proposals.
  - One difference noted was that Dr. Lee, The University of Iowa, has quite a bit of time (\$23,000 worth) of the research done by him. With Dr. Cable and Dr. White, Iowa State University, their combined time was less than half Dr. Lee's time. There was quite a bit of grad student assisted time in the Iowa State University proposal.
  - One thing that Dr. Cable/Dr. White proposed that was preferred over the competing proposal, was some quantitative testing on the pavements. This could be added to the other.
  - Dr. Cable's experience and familiarity with the research could be a benefit.
  - Conversely, a fresh set of eyes (Dr. Lee's) could also be a real positive.
  - From Dr. Lee's proposal, the benefit of a database was questioned.
  - There was support voiced for the database. As someone is considering different rehabilitation techniques, it would be handy to be able to sort through easily accessed information quickly. This could have real value to see what happened after time with different options, without having to shuffle through stacks of paper.
  - Dr. Lee's qualifications were submitted with his proposal. This is preferred for those who may not be familiar with the investigators.
  - It was questioned why there is \$10,000 worth of software licenses in Dr. Lee's proposal. Ian MacGillivray addressed the issue and stated that these things are closely monitored by staff and there is not a concern of a hidden bonus.
- *General Note:*
  - With all proposals, after one is selected, the board will give staff a list of items (if any) that are of concern. Staff will then act on those items and assist in resolving them according to the direction given by the board and in the best interest of the research. If there is an item after negotiation that is still an issue that impacts budget or the research greatly, staff will bring the information back to the board prior to a contract being approved.

- *Vote to select proposal:*
  - Iowa State University, Dr. Cable/Dr. White: 4 votes
  - The University of Iowa, Dr. Lee: 9 votes - ***Selected***
  - 2 abstaining
- *Issues/concerns that the board would like staff to address:*
  - The board would like staff to get details on the software license cost and make sure that the end product is in a standard form.
  - It is requested that quantitative testing on some of the pavements is included in the research according to the direction of the advisory committee.
- *Vote to approve:*
  - Mark Nahra moved that Dr. Lee's proposal be approved with the above direction given to staff and the funding split to be in proportion with the amount that each group puts into the IHRB total fund, 40% Primary, 50% Secondary, and 10% Street. Glen Miller seconded. Carried, 13 yes, 0 no, 2 abstaining.

### ***Review of Erosion Control for Highway Application***

- *The following general comments about the proposals were made:*
  - The University of Iowa proposal by Dr. Muste, seemed more comprehensive and the most responsive to request for proposals (RFP). There was also a much stronger reference to developing a guide, which is one of the principle items in the RFP.
  - The six months time frame seemed quite short for this research.
  - It is mostly a literature search, so the time frame should be fine.
  - The same comment was made regarding the preference of the board to have the qualifications of the investigator(s) included in the proposal. Mark Dunn mentioned that the solicitations went out prior to the evaluation sheet being in place. In the next round of solicitations, the information on the evaluation process/basis will go out with the requests for proposals.
  - University of Northern Iowa was complimented on being the group of people in the state with the background to perform this research. They have the contacts and have done a lot of work in this area. They also have less overhead, which is an attractive aspect of their proposal.
  - One drawback of the University of Northern Iowa proposal by Dr. Smith, is that there is an emphasis on the native grasses. The report shouldn't focus just on native grasses, it needs to focus on erosion control.
  - The University of Iowa is in a good location to do testing.
  - The Iowa State University proposal by Dr. Kjartanson and Dr. Lohnes, was supported in that it involved some "out of the box" thinking.
- *Vote to select proposal:*
  - Iowa State University, Dr. Kjartanson/Dr. Lohnes: 2 votes
  - University of Northern Iowa, Dr. Smith: 5 votes
  - The University of Iowa, Dr. Muste: 6 votes - ***Selected***
  - 2 abstaining

- *Issues/concerns that the board would like staff to address:*
  - None
- *Vote to approve:*
  - Mark Nahra moved to approve Dr. Muste's proposal with a funding split of 50% Primary, 40% Secondary, and 10% Street. Randall Krauel seconded. Carried, 13 yes, 0 no, and 0 abstaining.

### ***Review of Transportation Information System for Road System Managers***

- *The following general comments about the proposals were made:*
  - The solicitation seemed like a request for new/emerging technologies to be brought to the board's attention. The University of Iowa's proposal by Dr. Lee, responded best to that. There was concern again about software license. The other 2 proposals seemed to narrow down the focus on certain technologies. If it's the will of the board to narrow the focus down to the application of those certain technologies, those proposals would fit that type of request.
  - The Iowa State University proposal by Dr. Sardo, focused on bridge structures, and may have a greater chance of a successful, useful product. They played to a particular strength that they have. The solicitation was pretty wide, and gave them flexibility on how to address it.
  - Iowa State University's approach did not address pavements and is possibly too customized of an approach.
  - The meaning behind the solicitation was understood by some members/alternates to find some technology to measure our whole array of assets. University of Northern Iowa's proposal by Dr. Salim, might have addressed that better.
  - There was discussion on how this research would benefit each of the groups represented by the board. It was felt that this research may not be of much utility to the county road system. They know where their problems are and are not as likely to have a staff or time to use/learn another system of software. If there was one that addressed statewide needs better than the other, that one should get attention.
  - The state also knows where their problems exist. That's an end result. This should be something to inform where problems are going to be by measuring rate of deterioration, performance over time, etc. These assumptions exist initially when something is put up and a device tells whether it will make it or not.
  - At the state level, there is more consultation, more need for data, a much wider area, and a higher number of vehicles over the roads/bridges a day. More of a need for this system.
  - There was some concern of the counties not seeing that there is some practical interest/usage from this research which would benefit them.
  - There may be a need to see how it affects the state first.
  - There is nothing wrong with only one of the three jurisdictions benefitting from this. Each area has differences in needs and focuses. If there is enough here that it would benefit the state, and cities and counties would get some collateral information, that's not all bad either.
  - The counties may benefit more than believed. A lot of problem areas are known, but maybe this will assist in other ways. For example, a heavy load on a cold winter day, will the bridge get the proper inspection afterwards that it should?
  - The prices also range from \$63,000 from University of Northern Iowa, \$50,000 from Iowa State University, and \$49,000 from The University of Iowa. Is that \$13,000 more from University of Northern Iowa worth the difference?

- Iowa State University and The University of Iowa seem to be better engineering schools, especially with a focus on bridges. They may be more competent in this area than University of Northern Iowa. University of Northern Iowa is good in some areas, however, this may not be it. The price difference plays into this also.
- With the experience that Iowa State University has, there was support for their proposal.
- Something that was troublesome with the University of Northern Iowa proposal, was that there appeared to be a deficient understanding of what sort of factors should even be measured. They seemed to have a clear understanding how to go about setting up some kind of automation system to retrieve data, but there didn't seem to be the best understanding of what data might be gathered, what to do with it and how it might be analyzed.
- There was mention of RWIS in University of Northern Iowa's proposal. RWIS has a lot more adaptability and is being used even for agriculture information. There are about 50 stations now.
- There was discussion by the board a few months ago on this RFP being such a general statement. Some of the comments at that time were in favor of seeing what direction was taken by the researchers.
- One of the outcomes could be that we select none of them, and resubmit the RFP. However, if they are responsive to the RFP, it would be unfair to not select one.
- The proposal was interpreted by some members/alternates as a search for what's out there that could be adaptable, that we could use, as a group, in the state, to measure transportation system performance/elements and if that didn't do it, maybe we should fall back and re-group.
- This is a good bunch of researchers, it just needs a different direction.
- *Motion:*
  - Mark Nahra moved that the board reject the 3 proposals and have a subcommittee, made up of at least 1 county, 1 state and 1 city representative from the research board, refine the solicitation and resubmit it to the researchers involved in this review. Brian Keierleber seconded. Carried with 13 yes, 0 no, and 2 abstaining.
- Mark Dunn will organize this group.

### ***Review of Transportation Information System for Road Users***

- *The following general comments about the proposals were made:*
  - Both proposals were responsive to the request.
  - Again, it was mentioned that having the researcher's qualifications included in the proposal is preferred by the board. However, that request didn't go with this group of RFPs.
  - There was support for Iowa State University's proposal by Steve Andrie. It was very comprehensive and presented a thorough understanding of the request.
  - Iowa State University has good background, facilities and staff to get this accomplished. They have a bit of an edge.
  - This is just for Phase I at this time.

- *Vote to select proposal:*
  - The University of Iowa, Dr. Nixon: 0 votes
  - Iowa State University/CTRE, Steve Andrie: 13 votes - ***Selected***
  - 2 abstaining
- *Issues/concerns that the board would like staff to address:*
  - None
- *Vote to approve:*
  - Randall Krauel moved to approve Steve Andrie's proposal with a funding split of 65% Primary, 10% Secondary, and 25% Street. Glen Miller seconded. Carried with 13 yes, 0 no, and 2 abstaining.

### **Proposal, "Evaluation of Unbonded Ultrathin Whitetopping of Brick Streets"**

- Jim Cable, Iowa State University, presented the opportunity to do research on a construction project in Oskaloosa. This comes to the board as a proposal due to the time frame for the construction. It is believed that this would be the first time to use an ultrathin whitetopping on brick. The actual delta cost for the project would be \$26,742 and would be paid to the city of Oskaloosa. ISU will accomplish the monitoring and testing for \$20,307.
- The board discussed and agreed that there have been past projects that have set a precedence to the board contributing to the materials of construction. It seems to take some of the risk aspect from the project. The city would assume the risk of replacement if this fails. If it works well, they have the benefit of a good street, and we end up with beneficial information.
- It was stated by the members/alternates that most cities, large and small have brick streets. Many of these brick streets contain 2 layers of bricks. There are also primary extensions that fall into this. Primary offered to pick up 25%. The state may be able to contribute road water services also. The counties work in unincorporated towns and would benefit from this study also.
- Tom Myers moved to approve the research at a total cost to the board of \$47,049 with a funding split of 25% Primary, 10 Secondary, and 65% Street. Randall Krauel seconded. Carried with 15 yes, 0 no, and 0 abstaining.

### **New Business**

- To keep the board well informed, Ian MacGillivray reviewed the research activity that is covered by the State Planning and Research (SP & R) Funding Program (federal funds). The plan reviewed has been submitted to FHWA for approval. This fall, staff will be bringing back a more thorough report on federal related and national (AASHTO) related research activity. HR-140, "Collection and Analysis of Stream Flow Data", previously covered by IHRB funds, has been transferred to SP & R funding.



- Mark Dunn asked for the proposal review sheets to be left on the tables or to be mailed in to him within the next few weeks. Due to the number of review sheets possible to be received from members and alternates, instead of having the information consolidated onto one sheet, the review sheets will be copied and sent out to the researchers upon their request.
- The reduction in gas tax was discussed in regard to any affect it would have on the revenue the board has to work with. The counties reported that the projection was about the same total dollars for next year. No growth would be seen, but it shouldn't be lower. With the surplus that the counties have built up, it shouldn't be a problem. The Primary and Street funds receive a set amount every year.
- The recent press release on the DOT staff cuts has not affected the research office at this time.

**John Adam adjourned the meeting.**

**Date of Next Meeting:**

**THE NEXT MEETING WILL BE HELD SEPTEMBER 28, 2001 AT 9:30 A.M., IN THE IOWA MEMORIAL UNION AT THE UNIVERSITY OF IOWA, IOWA CITY, IOWA.**

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Mark Dunn, IHRB Secretary